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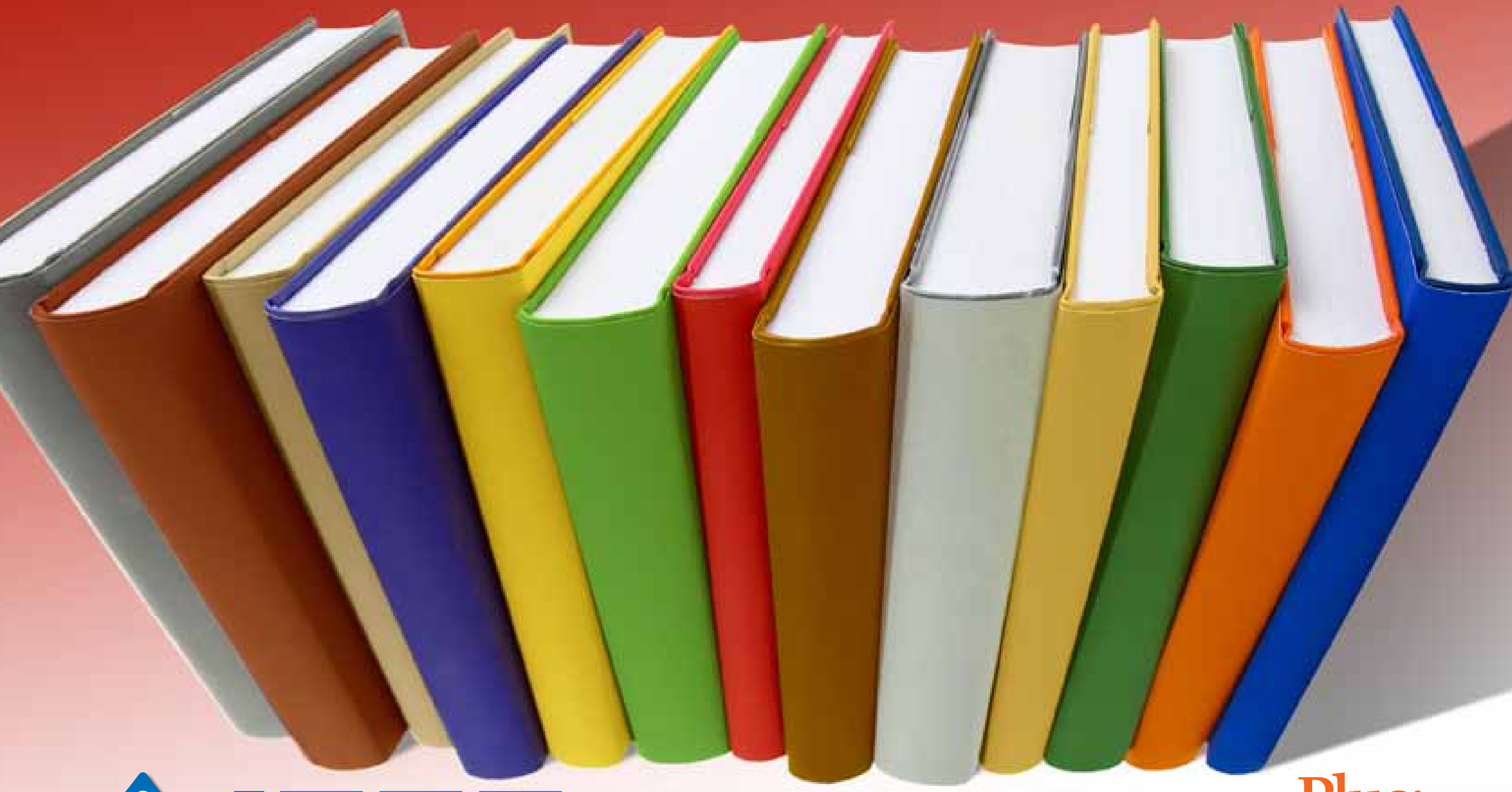

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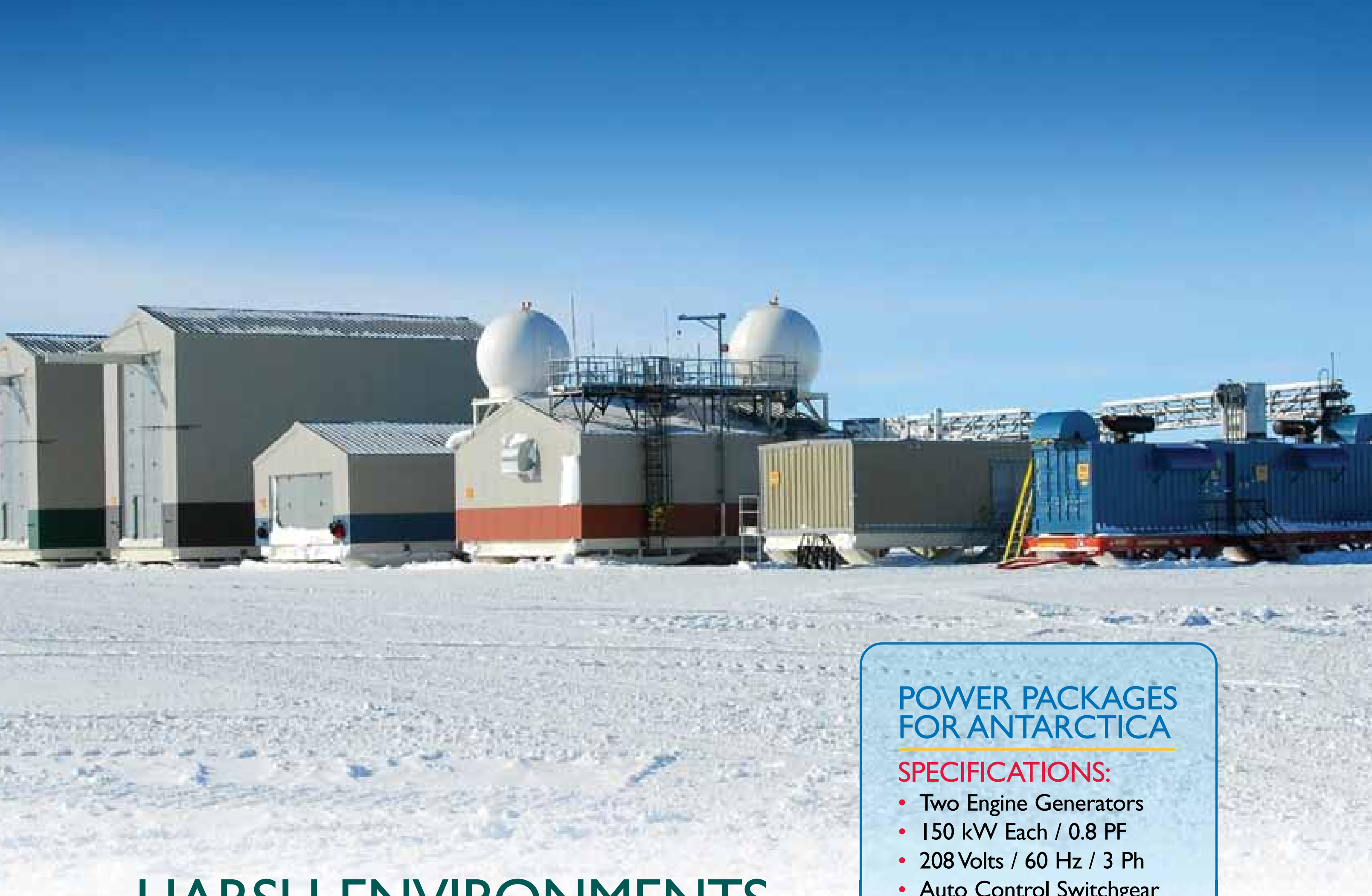

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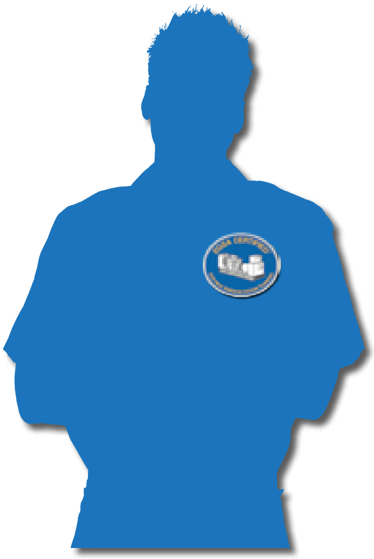

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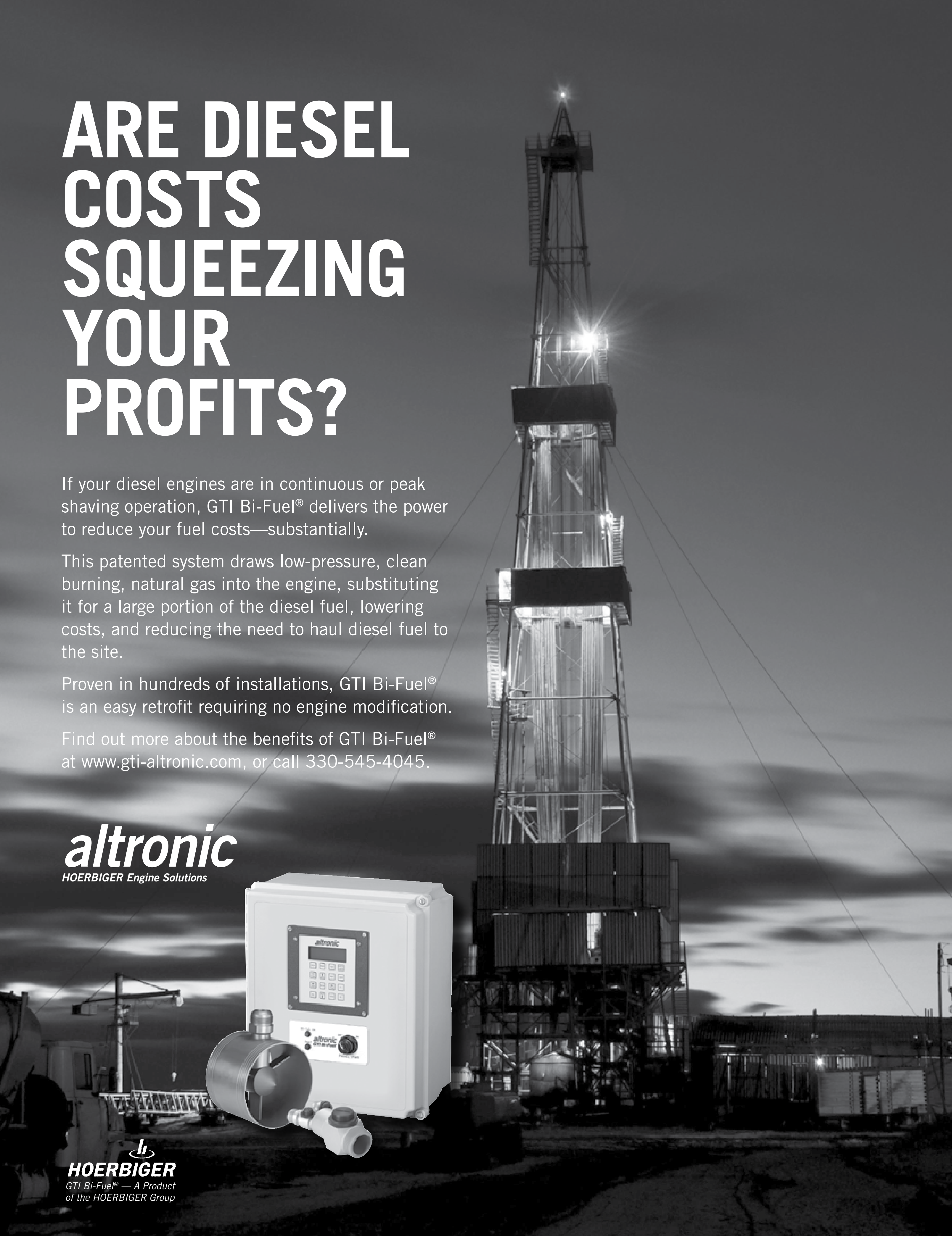

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Industry Trade Shows

POWER-GEN Asia 2011

September 27-29, 2011, Kuala Lumpur, Malaysia
The region's premier conference and exhibition for the power generation, renewable energy and transmission and distribution industries. To exhibit, contact Bridgett Morgan at *bridgettm@pennwell.com.*

POWER-GEN International 2011

December 13-15, 2011; Las Vegas, Nevada
The world's largest show for power generation, featuring the EGSA On-Site Power Pavilion. For exhibit information, contact EGSA at (561) 750-5575, ext 205 or e-mail Jalane Kellough at *J.Kellough@EGSA.org.*

POWER-GEN Middle East 2012

February 6-8, 2012; Doha, Qatar
The region's premier conference and exhibition for the power generation, transmission and distribution and water industries. To exhibit, contact Bridgett Morgan at *bridgettm@pennwell.com.*

Conferences

EGSA 2011 Fall Technical & Marketing Conference

September 18-20, 2011; Baltimore, MD
Speakers will cover business and technical aspects of On-Site Power Generation and current industry trends. Information and registration is available online at *EGSA.org/fall.*

NFMT Conference & Expo

March 13-15, 2012; Baltimore, MD
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Las Vegas, NV .... December 13-15*

*To be held concurrently with POWER-GEN International 2011

Advanced Schools

Pittsburgh, PA ....August 1-4

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The Kelly Challenge

Following up on my "From the Top" column in the January/February issue of Powerline, where I touched on my goals for the EGSA Technician Certification Program, I would like to present the Kelly Challenge. The goal of this challenge is to further establish EGSA's Generator Technician Certification Program as the national standard of excellence in the On-Site Electrical Generation Industry.

As many of you know, dealers who value high standards are sometimes faced with bidding on service contracts only to find another company bidding at a price that is far lower than everyone else. It becomes apparent that the low-priced bidder does not utilize highly-trained, qualified people. There is no objective way for the contract officer to know any better – other than by asking for technicians with specific qualifications. The challenge is for the membership to actively influence the writing of service contract specifications to include the requirement for any winning company to employ EGSA certified technicians. This challenge has particular importance for distributor/ dealers.

As more RFPs that contain this requirement hit the street, there will be a huge incentive for companies who are serious about the generator service and maintenance business to have their technicians certified. This may also have the added benefit of enticing more companies to join EGSA.

With the Kelly Challenge I am reaching out to both member firms and individuals to help to further establish EGSA and the EGSA Technician Certification Program as the industry standard. I ask that both firms and individuals initiate a "full-court press" to jumpstart this initiative and, in doing so, raise the standard of quality within the On-Site Electrical Generating Industry as a whole!

The Kelly Challenge will consist of the following guidelines:

$25 EGSA Bucks will be awarded to individual EGSA members (up to a maximum of $200 per member) for each specification that is written and distributed that prefers or requires the use of EGSA Certified Generator Technicians.

EGSA Bucks do not expire and can be redeemed for any EGSA product including: Registrations, reference books, membership renewal dues, etc.

The Kelly Challenge and EGSA's increased marketing to end-users [through our new relationship with National Facilities Management Technology (NFMT) in the form of the EGSA Power Source Pavilion at the NFMT Conference & Expo in 2012] partnered with other marketing initiatives should create additional momentum in tech certification. The key to success is for member companies to make it part of their culture to identify with EGSA and the value that technician certification brings to our industry. The result of these efforts is increased prestige and awareness of EGSA (and consequently EGSA members) and as an added benefit, increased membership.

As always, I welcome any new ideas to help promote EGSA and the EGSA Technician Certification Program. Please email your ideas and suggestions to EGSA at *e-mail@egsa.org*.

I look forward to having further discussions on this subject at the fall conference in Baltimore, MD. See you there! ■

Certification Update

George Rowley
EGSA Director
of Education
G.Rowley@EGSA.org

Don't forget about the value of certification. Our certification program and exam have established standards of performance and knowledge for generator service technicians. By passing the exam, the tech has demonstrated proficiency and a level of knowledge and skill that ensures that the tech possesses the know-how to set themselves apart from "back yard" mechanics. Certification therefore assures everyone, from manufacturers to end-users, that they can be confident that a certified tech has the skill and knowledge to install, maintain, service and repair expensive and complicated power generation equipment.

The certification program is having a good year so far. On average, we are certifying about 9 techs per month and 44 technicians have passed the test so far this year. We expect activity to increase as we engage our plan to market the program to end users. As of May 31, 2011 there were 427 Certified Technicians. As mentioned in a previous column, the certifications of technicians that passed the pilot test expired last December and the process of recertification is ongoing. We do anticipate that all of the techs that took the Pilot Test will recertify and it is likely that this will occur over a period of several months.

Where are they? With 12 techs passing the test in May, California has surged into the lead with 41 certified techs. The previous leader, Ohio, now has 33 certified techs along with Georgia. As of May the breakdown of Certified Techs is listed in the graphic herein.

Certified Technician Demographics

As of May 31, 2011 the number of EGSA Certified Technicians was distributed as follows:

41	CA
33	GA, OH
25	VA
23	MI
21	FL, TX
20	CT
19	Ontario, Canada
17	IL
15	AZ, NC, PA
14	NJ, WI
12	MA, NY
11	MO
8	Trinidad and Tobago
6	MD, SC
5	IN, WV
4	NH, TN, UT
3	LA, MN, WA
2	AL, AK, AR, CO, DE, IA, NV, OK
1	HI, MS; British Columbia, Canada; France; Guam; Manitoba, Canada
0	DC, ID, KS, KY, ME, MT, NE, NM, ND, OR, RI, SD, VT, WY

Education Update

After months of in-depth investigation and analysis, the On-line Learning Committee will soon begin developing recommendations for the implementation of an e-Learning program for EGSA. The recommendations, including a business plan, will be presented to the Education Committee for review and approval. If approved by the Education Committee the recommendations and plan will be presented to the Board of Directors for review, approval, and funding.

As mentioned previously, an EGSA e-Learning program will be an expensive proposition. We need to be very sure that EGSA will experience a reasonable return on its investment and that the program will be self-sustaining. To ensure that these conditions are met members of the On-Line Learning Committee encountered a very steep learning curve. The guidance of our consultant, Bill Heacock, has been invaluable in the process. With Bill's help, the Committee has been able to grasp and fully understand on-line learning and its applicability to EGSA.

We have made excellent progress and have identified and addressed a number of critical issues and key questions. Most of the issues and questions are related to the Learning Management System (LMS) that we will use. An LMS is the heart and soul of an e-Learning program, enabling people to register and pay on-line and is linked to the actual on-line course. The LMS will also generate reports about progress, issue certificates of completion, and can be used for testing. Additionally, the LMS tracks an individual's EGSA on-line learning history. Once we make a decision about the LMS, we can then begin to make recommendations on which vendor to use.

If you have suggestions for or questions about EGSA education programs, please contact George Rowley via an e-mail to *g.rowley@egsa.org* or by phone at 561-237-5557. ■

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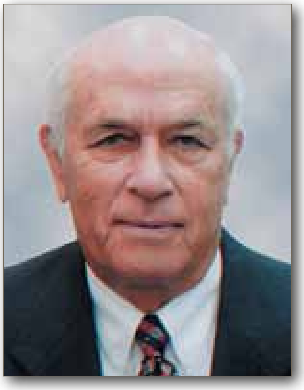

Herb Whittall
EGSA Technical Advisor
HWhittall@comcast.net

Codes & Standards

IEEE has revised Standard IEEE C37.09B™ -*Standard Test Procedure for AC High-Voltage Circuit breakers Rated on a Symmetrical Current basis Amendment 2:* To change the description of transient recovery voltage to harmonize with the standard with IEC 622271-100. This revision continues the effort to harmonize IEEE and IEC Standards.

IEEE approves a revision to standard IEEE SI_10(TM) – *Standard for Metric Practice*, revising a list of units recognized for us with conversion factors for use with the international system of metric units (SI).

I was asked to vote for EGSA on IEC 61710 Ed 2.0 – *Power Law Model- Goodness of Fit Test and Estimation Methods*. It appears to me to be another bureaucratic standard put out by the IEC. I am doubtful that any EGSA member will use it and I had never heard of the words in the title. The math in the standard is horrific. In my opinion, before you even approach the data on failures needed to utilize the math set forth in this standard, you had better be looking at why the item is failing and already have a fix in place. I actually voted to accept since at this point only minor revisions could be accepted.

The May- June issue of IEEE Industry Applications Magazine has three articles that will be of interest to some EGSA members. A seven-page article about NFPA 70 E and Arc Flash begins on page 12. This article covers both methods to limit Arc-Flash and a detection technique I am not familiar with – Optical Arc-Flash Sensing.

An article titled "Safety Management Systems" with a subtitle of "Potential Impact of ANSI Z10 and CSA Z1000" can be found beginning on page 19. There is a cartoon at the top showing two men with balloons that they are trying to mesh. One balloon represents ANSI Z10 and CSA Z1000 and the other represents NFPA 70 E and CSA Z462. NFPA 70 E, as most of you know, is titled *Standard for Electrical Safety in the Workplace*. The Canadian Standard, CSA Z462-2008 is titled *Workplace Electrical Safety*. These latter two standards do not address management strategies to effectively manage electrical safety in the workplace. For this reason, ANSI Z10 *Occupational Health and Safety Management Systems* and CSA Z1000 *Occupational Health and Safety Management* are also discussed. Those of you who are responsible for these items should read this article.

The final article, starting on page 51, is titled "Selective Coordination," a topic that we discuss in every cycle of the NFPA Standards where Herb Daugherty and I represent EGSA. This article deals with selective coordination in low voltage motor control centers. The standard referred to in the article is UL 845 which requires a short circuit withstand rating of 3 cycles on the bus. Unfortunately, most low voltage circuit breakers are rated for up to 30 cycles short delay, which does not meet the requirements of UL 845.

UL 2201 *Standard for Portable Engine-Generator Assemblies* has a proposed revision to Article 15.8.1. The proposal is: The alternating current AC output receptacles shall be protected by a readily accessible, replaceable or manual reset type appropriately rated supplementary or branch circuit protector having a short circuit interrupting rating not less than the maximum fault current available from the generator. replaceable or manual reset type overcurrent protective device suitable for use as branch circuit protection. See 15.7.4 (underlined wording is new, red wording is removed) If you have a problem with this change, please let me know. The comment period will be passed, but not the balloting period. ■

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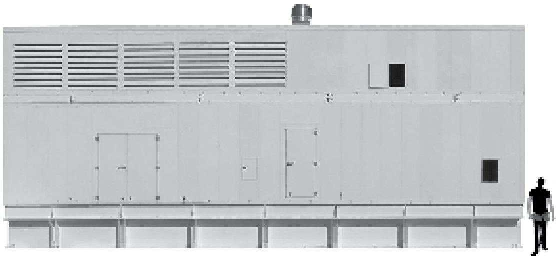

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A Little Isolation is Good for You

By: Steve Evans, CEO/General Manager of DEIF North American

How can a breaker trip over there on an unrelated circuit knock out your communications over here? Or you plugged your laptop into the Programmable Logic Controller (PLC) and the entire system went down? In one case, a large industrial plant had a control system of 43 PLCs. One short to ground on a CAN bus crashed all 43 PLCs at the same time. Break time!

Gremlins? How many times have you shaken your head and blamed electrical abnormalities on them? Well, maybe they get more credit than they deserve. These and other mysterious problems are probably due to a grounding or isolation problem.

Many control components can and do have connections to ground. In a typical generation system, this could include the PT and CT ground points, the engine ground with its components (temperature senders, for example), digital inputs and outputs passing control bits between control components, analog speed trim signal to governor (with the governor ground connected to the engine ground), the analog signal to the AVR (with the AVR ground connected to the electrical system ground), and load/var share lines connected to the controller common (See Figure 1).

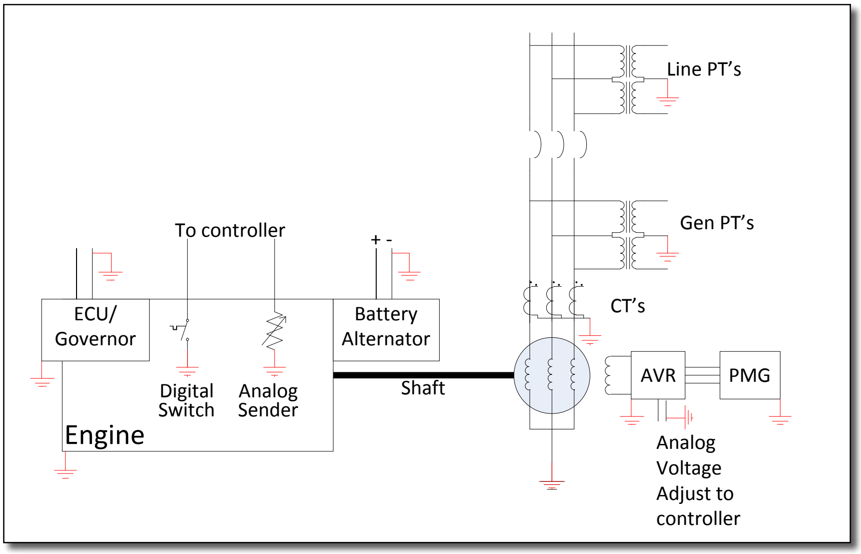

Figure 1. What is connected to 'Ground' in a typical Genset system?

All these 'ground' connections, in a perfect system, operate properly. But when electrical disturbances or faults happen, that is when problems can surface.

According to Badri Ram and DN Vishwakarma in ***Power System Protection and Switchgear***, 85% of all faults are line-to-ground faults. Also, 24% of all faults start in the switchgear and related control components and 7% in generators. When an asymmetrical (single phase to ground) fault occurs in a power system, the resulting fault current has a DC and AC component (See Figure 2). This large amount of current through even the best ground connection can result in a temporary raising of the ground point, effectively raising the electrical common.

To help illustrate this point, let's look at an example electrical system with three generators, a utility connection, and an example fault (See Figure 3). Every 'Z' represents an impedance, however small, that always happens in an electrical distribution system. G3 is farthest from the fault (besides the utility connection) and will have the highest impedance to a fault. All sources will feed the fault and all fault current must return to its source.

Let's look a little closer at the impedance that the fault current must travel through. Figure 4 on page 15 shows the voltages at different points in the simplified example system during a fault. Every connection has an impedance, every cable or bus has an impedance, and different control system components are connected at various points. (Remember, this is a theoretical example, not actual or absolute values.) The generated 277V (480V line to neutral) must drop across all the series impedances. As this high current flows through the system components on its way back to the source, the series impedances result in different voltages at different points. And don't forget the DC and AC component of the fault current.

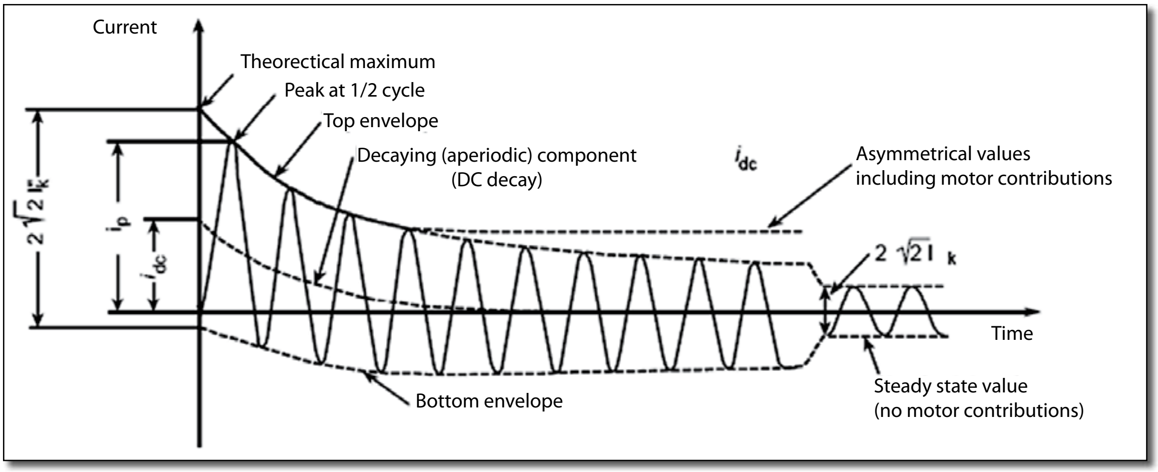

Figure 2. Asymmetrical Fault currents have both a DC and AC component. From Understanding IEC60909 on www.files.engineering.com

The PT secondaries of Gen 3 would be el-

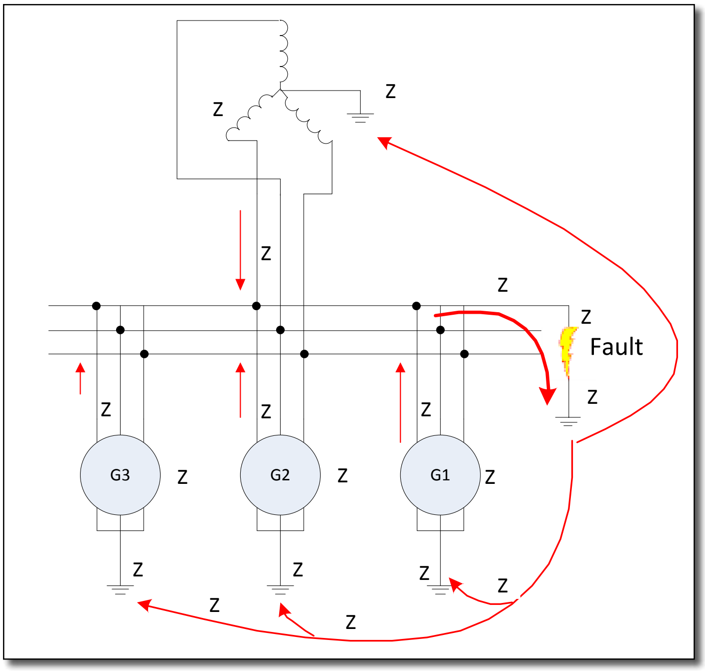

Figure 3. Example of 3 Gensets and a Utility Source Feeding a Fault With Z Showing Typical System Impedances

evated to 3 volts while the PT secondaries of Gen 1 would be elevated 4 volts. The difference between the ground at the controller in Gen 1 (raised 8V) and Gen 3 (raised 4V) is 4 volts. Analog load sharing lines often work at 3V = 100%, so if the fault induces a 4 volt difference in the commons, that could force the load share signal up or down and trip the entire system. (AC voltage may not affect load share lines: it is easy enough to filter it out. But remember the DC component of the fault.)

The difference between the ground and the signal line – it could be a digital signal like CAN bus or RS485 or an analog signal like the load share lines – could go to zero or to maximum, depending on the polarity. This could cause the controls to lose the signal momentarily or trip off line. Digital signals normally have a re-try function and they could repair themselves. In an effort to conserve energy, many manufacturers are using processors that run on a lower voltage. These can even be more susceptible to shifts in ground potential. Analog devices could stop working or even be damaged.

Communication systems often have very low voltage levels. You can easily see how elevating a ground point 8 volts could result in a loss of communications in a 5 volt system. Soren Christensen, an experienced engineer with DEIF, witnessed this exact phenomenon during troubleshooting at a multiple generator installation. Switching currents of adding a generator on line caused the loss of communication for several seconds as the DC component faded out and the communication processors retried until they were able to re-establish communications. The root cause was traced back to a grounding problem.

The rise in the ground point voltage could also result in circulating currents between the control units. It does not take much of a voltage difference to cause a significant current flow when the impedance is a piece of wire. This is also called ground loop currents or circulating currents. Often these can be catastrophic failures resulting in destroyed components.

The source of the problem could be other things in addition to the raised ground point due to fault currents. Connecting a non-isolated personal computer to a communications circuit, for example, or energizing a large motor or transformer or adding a generator on line could result in temporary shift in the ground point.

Electrical isolation can prevent problems like these from invading your control system. Electrical isolation, also called galvanic isolation or galvanic separation, is the separation of electrical commons via magnetic isolation (transformers) or optical isolators. Electrical common is not always the same as ground but are usually tied to ground at one point. In gensets, often the battery negative is grounded and so is the neutral of the power system.

A totally isolated system will not be disrupted by these fluctuations in ground potential. Just isolating one or two points is really not sufficient. You never know where the fault will occur or what control component interconnection will carry the circulating current. Resistive isolation is sometimes used, but it

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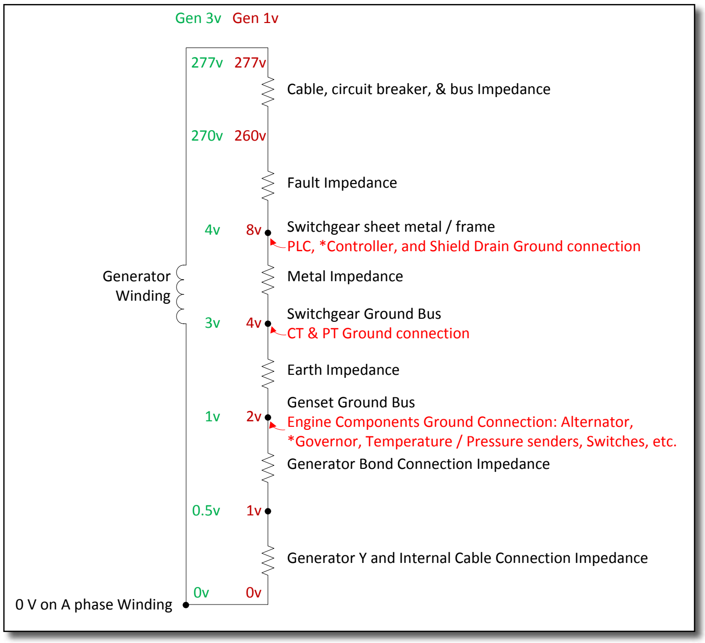
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Gen 1v
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277v
Cable, circuit breaker, & bus Impedance
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260v
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8v
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Generator Winding
Metal Impedance
3v
4v
Switchgear Ground Bus
CT & PT Ground connection
Earth Impedance
1v
2v
Genset Ground Bus
Engine Components Ground Connection: Alternator, *Governor, Temperature / Pressure senders, Switches, etc.
Generator Bond Connection Impedance
0.5v
1v
Generator Y and Internal Cable Connection Impedance
0v
0v
0 V on A phase Winding

*Figure 4. Voltages at Critical Points in a Genset System during a Fault.*If the shield conductor of the communication cable was grounded at the controller and the governor, a difference of 8-2 or 6 volts could produce a circulating current that could damage sensitive electronics.*

does not work all the time, either. Some have tried to use resistors to isolate PT inputs – bus voltages and gen voltages – using resistors. If there is a small difference between the ground points, current will flow dropping voltage between the neutral points. This small voltage does not sound like much, but when multiplied by the PT ratio, it can and has resulted in the generator breaker being closed a few degrees out of sync, resulting in excessive current flow.

We have seen how a fault in one circuit can create a disturbance or even a component failure in another, perhaps unrelated, circuit. If a circuit is isolated, then a fault on that input would not migrate to other circuits and problems in other circuits would not propagate into this circuit. If you know where the problem will be, you can isolate only this one circuit. Of course that is impossible, so the only way to be absolutely sure is to isolate every circuit. This is easy in theory, but the components required for isolation can add a lot of production cost and will probably only be available in better control systems.

What is it worth to you to prevent gremlins in your control system? ■

About the Author

Steve Evans is CEO/General Manager of DEIF's North American operation based in Fort Collins, CO and one of the volunteer instructors with EGSA's On-Site Power School. He has been involved in the transmission, protection, generation, distribution, conversion, and control of electrical power since 1981. Contact him at *see@deif.com*.

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IEEE Color Books

Gone Forever - No!

By: Herb Daugherty, Life Member of IEEE

The IEEE Color Book Series for industrial and commercial power systems for decades has been a respected, trusted and often, quoted source of design and technical guidance. Written by industry experts, and reviewed and revised on a regular basis under the auspices of the IEEE Standards Development Process, the IEEE Color Book Series have long been used extensively as reference guides for inspectors, contractors and electrical engineers to find practical solutions to questions on design, installation, maintenance, and operation of industrial, commercial, and institutional electrical power systems. They have also been known to act as a reference in many university-level engineering classes across the Country.

The IEEE Color Books contain a type of Standard known as "Recommended Practices." As such, for decades they have been revered by, and used extensively by, electrical designers and engineers to provide practical, workable solutions to technical questions and problems.

The Color Books standards have been written and regularly updated since 1945. The series consists of:

RED BOOK - IEEE Recommended Practice for Electric Power Distribution for Industrial Plants

GREEN BOOK – IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems

GRAY BOOK – IEEE Recommended Practice for Electric Power Systems in Commercial Buildings

BUFF BOOK – IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Buildings

BROWN BOOK – IEEE Recommended Practice for Industrial and Commercial Power Systems Analysis

ORANGE BOOK – IEEE Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Buildings

GOLD BOOK – IEEE Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems

WHITE BOOK – IEEE Recommended Practice for Electric Systems in Health Care Facilities

BRONZE BOOK – IEEE Recommended Practice for Energy Management in Commercial and Industrial Facilities

YELLOW BOOK – IEEE Recommended Practice for Maintenance Operation and Safety of Industrial and Commercial Power Systems

BLUE BOOK – IEEE Recommended Practice for Applying Low-Voltage Circuit Breakers used in Industrial and Commercial Power Systems

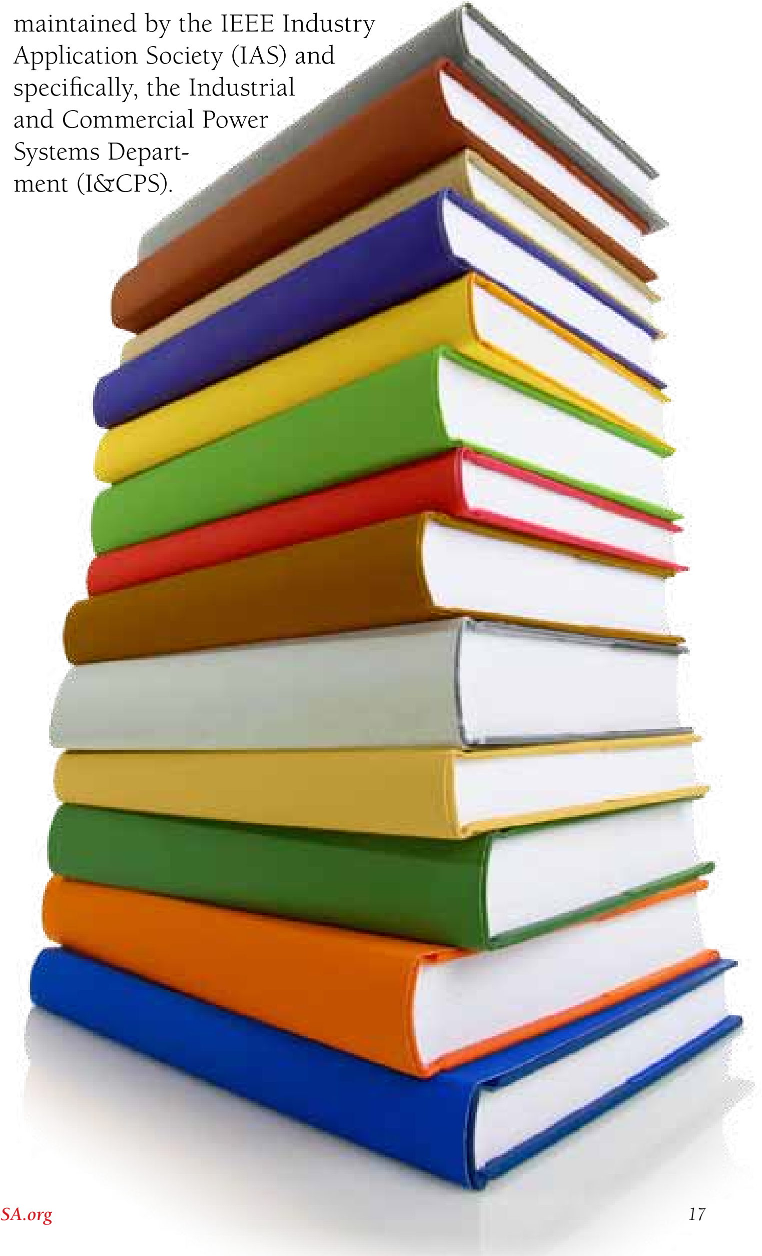
EMERALD BOOK – IEEE Recommended Practice for Powering and Grounding Sensitive Electronic Equipment

VIOLET BOOK – IEEE Recommended Practice for Short Circuit Calculations in Industrial and Commercial Power Systems

What's Happening to the Color Books?

There is a growing misconception that the Color Book Series is going away; that it will no longer exist. To paraphrase the great writer Mark Twain, "reports of the death of the Color Book series is greatly exaggerated".

The Color Books are written and maintained by the IEEE Industry Application Society (IAS) and specifically, the Industrial and Commercial Power Systems Department (I&CPS).



In 2002, the I&CPS initiated a major project to reorganize the series. The reorganization was designed to create more flexibility and speed in the new review and publication process, thus encouraging more volunteers to share their knowledge and time under the new structure. In addition, the evolution to an online model was designed to instigate faster update cycles, which will give users rapid access to the most up-to-date information. As a result, the new structure will be faster, friendlier and more flexible.

What about the Future?

The future make-up of the new format, which is underway, is to rearrange and repackage the 13 existing Recommended Practices into a series of "dot" standards along with a generalized, introductory "base" book. These smaller, concise standards will be easier to maintain, and as new technologies emerge, it will be much easier to ballot and reissue. In addition, conversion into these smaller "dot" standards will allow power systems engineers to select the information they require while still being confident that it (1) conforms to current best practices, (2) is technically correct, and (3) reflects the latest technologies. This means more "user-friendly" sections for the industry.

The new introductory, or "base," book will consist of the more common (or basic) material utilized in power system design. It will serve as an introduction to the design, installation, operation, and maintenance of electrical power systems.

The tentative outline for the "base" book, or new IEEE 3000, "Recommended Practice for the Engineering of Industrial and Commercial Power Systems" is as follows:

1. Introduction
  1.1 Scope and Purpose
  1.2 Background
  1.3 Moving Forward

2. Fundamentals of Power Systems
  2.1 Electric Power Circuits
  2.2 Power System Generation and Delivery
  2.3 Electrical Faults
  2.4 Power Quality
  2.5 Electrical Safety

3. Power System Generation and Delivery Equipment
  3.1 Generators
  3.2 Transformers
  3.3 Conductors, Raceways, and Cable Trays
  3.4 Protective Devices
  3.5 Distribution Equipment
  3.6 Automatic Transfer Equipment

4. Power Utilization Equipment
  4.1 Motor Control Centers and Motor Controllers
  4.2 Building Loads
  4.3 Industrial Loads
  4.4 Instrumentation and Control
  4.5 Control of Devices, Communications & Signals

5. Design Approach
  5.1 Electrical Codes
  5.2 Design from Load to Source
  5.3 Reliability
  5.4 Maintainability
  5.5 Flexibility
  5.6 System Analysis – Overload/Fault Response
  5.7 Cost Effectiveness
  5.8 Energy Conservation
  5.9 Sustainable Design

6. Design Example

7. Power System Management
  7.1 Design
  7.2 Construction
  7.3 Operations
  7.4 Maintenance
  7.5 Projects

The outline is tentative at this time. Subheadings will naturally be added or deleted as work progresses. Much of the material for these topics will be extracted from the existing Color Books.

The proposed organization of the 60 or so "dot" standards, are shown below:

- "Power Systems Design" (Primarily from Red Book, Gray Book, and White Book)
- Recommended Practice for the Planning of Industrial and Commercial Power Systems
- Recommended Practice for Evaluating the Electrical Service Requirements of Industrial and Commercial Power Systems
- Recommended Practice for the Design of Industrial and Commercial Power Systems
- Recommended Practice for Estimating the Costs of Industrial and Commercial Power Systems
- Recommended Practice for the Application of Power Distribution Apparatus in Industrial and Commercial Power Systems

- Recommended Practice for the Expansion, Modernization, and Rehabilitation of Industrial and Commercial Power Systems
- Recommended Practice for the Application of Communication and Signaling Systems used in Industrial and Commercial Power Systems
- Recommended Practice for the Instrumentation and Metering of Industrial and Commercial Power Systems
- Recommended Practice for the Lighting of Industrial and Commercial Power Systems
- Recommended Practice for Electric Space Conditioning of Industrial and Commercial Power Systems
- Recommended Practice for the Application of Controllers and Automation to Industrial and Commercial Power Systems
- "Power Systems Analysis" (primarily from Brown Book, Gold Book, and Violet Book)
- Recommended Practice for the Modeling and Simulation of Industrial and Commercial Power Systems as a precursor to Conducting System Studies
- Recommended Practice for Conducting a Load Flow Study of Industrial and Commercial Power Systems
- Recommended Practice for Conducting Short-Circuit Studies of Industrial and Commercial Power Systems
- Recommended Practice for Conducting Device Duty Short-Circuit Calculations in Industrial and Commercial Power Systems
- Recommended Practice for Conducting Arc-Flash Calculations in Industrial and Commercial Power Systems
- Recommended Practice for Conducting Transient Stability Studies of Industrial and Commercial Power Systems
- Recommended Practice for Conducting Motor Starting Studies in Industrial and Commercial Power Systems
- Recommended Practice for Conducting Harmonic Analysis Studies of Industrial and Commercial Power Systems
- Recommended Practice for Conducting Switching Transient Studies of Industrial and Commercial Power Systems
- Recommended Practice for Conducting Cable Ampacity and Sizing Studies of Industrial and Commercial Power Systems
- Recommended Practice for Analyzing Voltage Sags in Industrial and Commercial Power Systems
- Recommended Practice for Analyzing DC Auxiliary and Battery Systems for Industrial and Commercial Power Systems
- "Power System Grounding" (primarily from Green Book and Emerald Book)
- Recommended Practice for the System Grounding of Industrial and Commercial Power Systems
- Recommended Practice for Equipment Grounding in Industrial and Commercial Power Systems
- Recommended Practice for Static Discharge Protection Grounding of Industrial and Commercial Power Systems
- Recommended Practice for Lightning Protection Grounding of Industrial and Commercial Power Systems
- Recommended Practice for the Powering and Grounding of Electronic Equipment in Industrial and Commercial Power Systems
- "Protection and Coordination" (primarily from Buff Book and Blue Book")
- Recommended Practice for the Application of Instrument Transformers in Industrial and Commercial Power Systems
- Recommended Practice for the Application of Protective Relays in Industrial and Commercial Power Systems
- Recommended Practice for the Application of Low-Voltage Fuses in Industrial and Commercial Power Systems
- Recommended Practice for the Application of High-Voltage Fuses in Industrial and Commercial Power Systems
- Recommended Practice for Low-Voltage Circuit Breakers in Industrial and Commercial Power Systems
- Recommended Practice for Ground-Fault Protection of Industrial and Commercial Power Systems
- Recommended Practice for Conductor Protection in Industrial and Commercial Power Systems
- Recommended Practice for Motor Protection in Industrial and Commercial Power Systems
- Recommended Practice for Transformer Protection in Industrial and Commercial Power Systems
- Recommended Practice for Generator Protection in Industrial and Commercial Power Systems
- Recommended Practice for Bus and Switchgear Protection in Industrial and Commercial Power Systems
- Recommended Practice for Service and Supply Line Protection in Industrial and Commercial Power Systems
- Recommended Practice for Overcurrent Coordination of Industrial and Commercial Power Systems
- "Emergency and Standby Power" (primarily from Orange Book, Bronze Book, and Gray Book)
- Recommended Practice for Determining the Need for Emergency and Standby Power Systems in Industrial and Commercial Power Systems
- Recommended Practice for the Application of Generator Systems for use in Emergency and Standby Systems
- Recommended Practice for the Application of Stored –Energy Systems for use in Emergency and Standby Systems
- Recommended Practice for Improving the Reliability of Emergency and Standby Systems
- Recommended Practice for the Energy Management of Industrial and Commercial Power Systems – An Introduction

- "Power Systems Maintenance, Operations and Safety" (primarily from the Yellow Book)
- Recommended Practice for the Operation and Management of Industrial and Commercial Power Systems
- Recommended Practice for the Maintenance of Industrial and Commercial Power Systems
- Recommended Practice for Electrical Safety in Industrial and Commercial Power Systems

Progress on the reorganization of the Color Books into the "dot" Standard series is ongoing. Just as the Color Book development relied on volunteer involvement, so does the new series of documents. IEEE, IAS, and I&CPS welcome the participation of new as well as experienced Engineers. Numerous engineers (volunteers) from a broad spectrum of power engineering disciplines will be needed to help create the standards. Experts will be welcomed, of course, but younger engineers are encouraged to participate and view this as a valuable opportunity to work with seasoned veterans to create standards that will define the industry over the next few decades.

The new resource, released over time in "dot" standard sections, will begin publication in 2011. For any volunteers wishing to participate, please contact: Patricia A. Gerdon at: *p.gerdon@ieee.org.* ■

About the Author:

Herb Daugherty is a graduate of Newark College of Engineering (now NJIT) with a B.S.E.E. He is a Life Member of IEEE and a former President of EGSA (Electrical Generating Systems Association). He is a Licensed Professional Engineer in NJ, and has written and presented papers at EGSA and National Association of Manufacturers and Power Quality.

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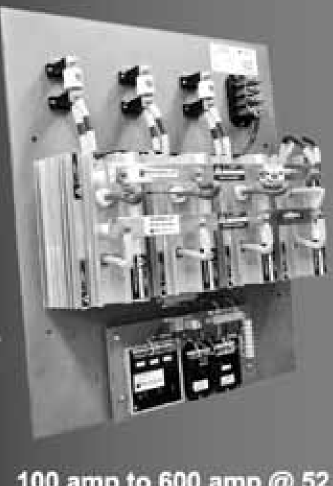

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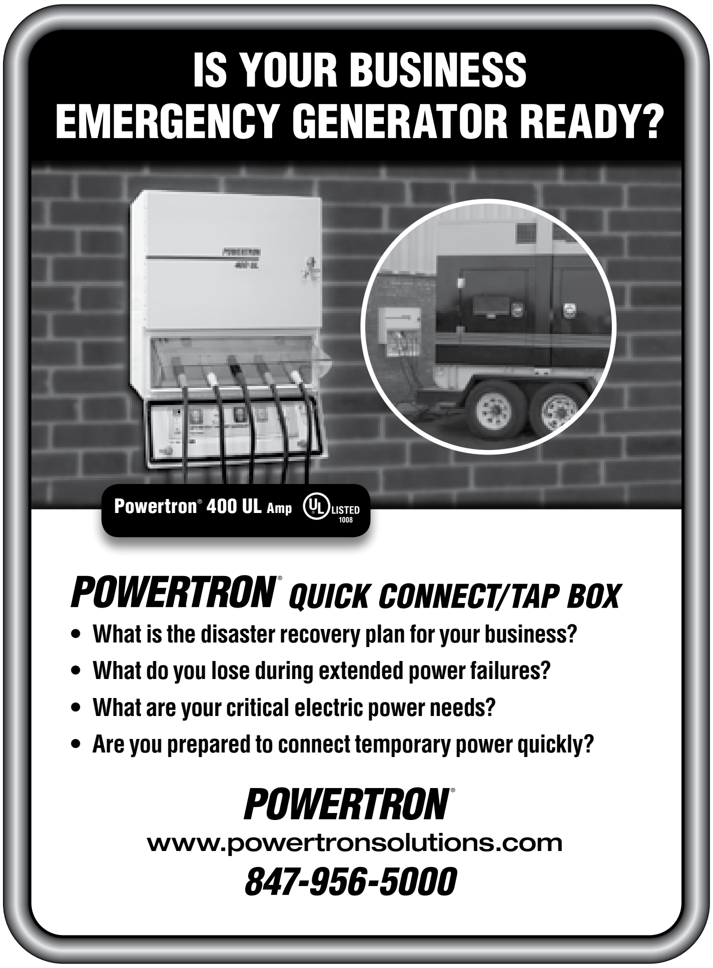

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2. They manufacture generators or other power conversion devices producing electricity.
3. They manufacture switchgear or electrical control devices.
4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.

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☐ CI **Contractor/Integrator Membership**
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II. ASSOCIATE REGULAR MEMBERSHIP

☐ AA **Trade Publication Membership**
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership–Trade Publications.

☐ AB **Trade Association Membership**
Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership–Allied Associations.

☐ AC **Engineer Membership**
Any consulting or specifying engineer may apply for Associate Membership–Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.

☐ AD **End-User Membership**
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☐ AE **Service Membership**
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership–Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.

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☐ AF **Student Membership**
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Application for Membership – page 2

Dues Schedule (Use for Section 3)

	Annual Dues	Initiation Fee	TOTAL
Manufacturer	$825	$200	$1025
Distributor/Dealer	$285	$100	$385
Contractor/Integrator	$285	$100	$385
Manufacturer's Representative	$285	$100	$385
Full Associate Member	$285	$100	$385
Energy Management Company	$200	$100	$300
Regular Associate Member	$200	$100	$300
Retiree Member	*Complimentary*	$0	$0
Student Member	*Complimentary*	$0	$0

NOTE: A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.

3. Membership Dues (Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues $__________

Membership Plaque (optional)** $ 49.95**

On-Site Power Reference Book (optional)** $ 125.00**

Florida Residents: Add 6% Sales Tax to ** items $__________

*Continental US Residents add $5 shipping/handing to**items.* $__________

*Non Continental US Residents should call EGSA Headquarters for shipping charges for **items.* **TOTAL** $__________

4. Payment Method (Payable in US$ drawn on U.S. bank, U.S. Money Order, or American Express)

☐ Check #____________ Amount Due $ __________

☐ Money Order

☐ Mastercard ☐ Visa ☐ American Express

Card # ______________________________ Exp. Date ______

Signature: ____

Print Name: ____

5. Products/Services

Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

____

____

____

____

____

____

Do you buy AND sell equipment? ☐ Yes ☐ No

Do you manufacture packaged equipment? ☐ Yes ☐ No

Available Codes:

01 ---Batteries/Battery Chargers
02 ---Control/Annunciator Systems
29 ---Education
30 ---Emission Control Equipment
04 ---Enclosures, Generator Set
05 ---Engines, Diesel or Gas
06 ---Engines, Gas Turbine
07 ---Engine Starters/Starting Aids
08 ---Filters, Lube Oil, Fuel or Air
28 ---Fuel Cells
03 ---Fuel Tanks and Fuel Storage Systems
09 ---Generator Laminations
10 ---Generator Sets
11 ---Generators/Alternators
12 ---Governors
13 ---Heat Recovery Systems
14 ---Instruments and controls, including meters, gauges, relays, contactors, or switches
15 ---Load Banks
16 ---Motor Generator Sets
17 ---Radiator/Heat Exchangers
18 ---Relays, Protective or Synchronizing
19 ---Silencers/Exhaust Systems/Noise Abatement
20 ---Solenoids
21 ---Switchgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels
22 ---Trailers, Generator Set
23 ---Transformers
24 ---Uninterruptible Power Supplies
25 ---Vibration Isolators
26 ---Voltage Regulators
27 ---Wiring Devices or Receptacles

Enter codes here:

Products sold: ________________

____

Products rented: ______________

____

Products serviced: _____________

____

6. Sponsor(s)

: A"Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name ______________________________Company Name ______________________________

7. Official Representative's Authorization

Signature ____Date ______________________

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EGSA Names Kim Giles Marketing Manager

EGSA welcomes Miss Kim Giles as our newest staff member and Marketing Manager. She comes to EGSA with more than 17 years of marketing, public relations and special events experience.

Most recently, Ms. Giles was the Statewide Director of Public Relations for a privately held consulting firm where she led numerous successful marketing and public relations campaigns from concept to completion during her tenure. Her strengths lie in her ability to develop and implement a marketing plan, her writing and presentation skills, and most importantly, her ability to connect with people.

Kim is creative in her project approach, consistently reaching an audience in innovative, project-specific ways. Her client list includes such notable organizations as the Florida Department of Transportation, the South Florida Water Management District, U.S. Air Force, the Seminole Tribe of Florida, and numerous municipalities and additional public and private organizations in the State of Florida.

In her free time, she is a voracious reader, an avid concert-goer and loves to entertain people in her home. She is originally from Greenville, SC and while she has resided in South Florida for almost 18 years, she will always consider herself a "southern belle." She is also a closet Indy Car fan and golf hack. Welcome, Kim! ■

EGSA On-Site Power Source Pavilion Webcast Available on EGSA's Web Site

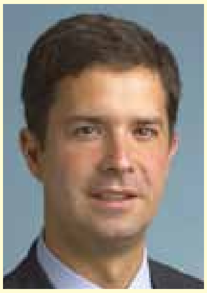
National Facilities Management & Technology (NFMT) and EGSA have united to launch the Power Source Pavilion debuting at the NFMT show in March of 2012. The Power Source Pavilion and educational sessions will provide facility professionals with exclusive access to on-site power solutions.

EGSA and NFMT have hosted two webcasts explaining the new partnership along with the benefits to our membership including:

- Reaching a new End-User market: Facility Managers
- Why NFMT was selected
- View a sample attendee/prospect list
- Best practices for gaining face time with facility managers
- Educating the End-User market about On-Site Power
- NFMT - the Largest Facility Management show in the nation

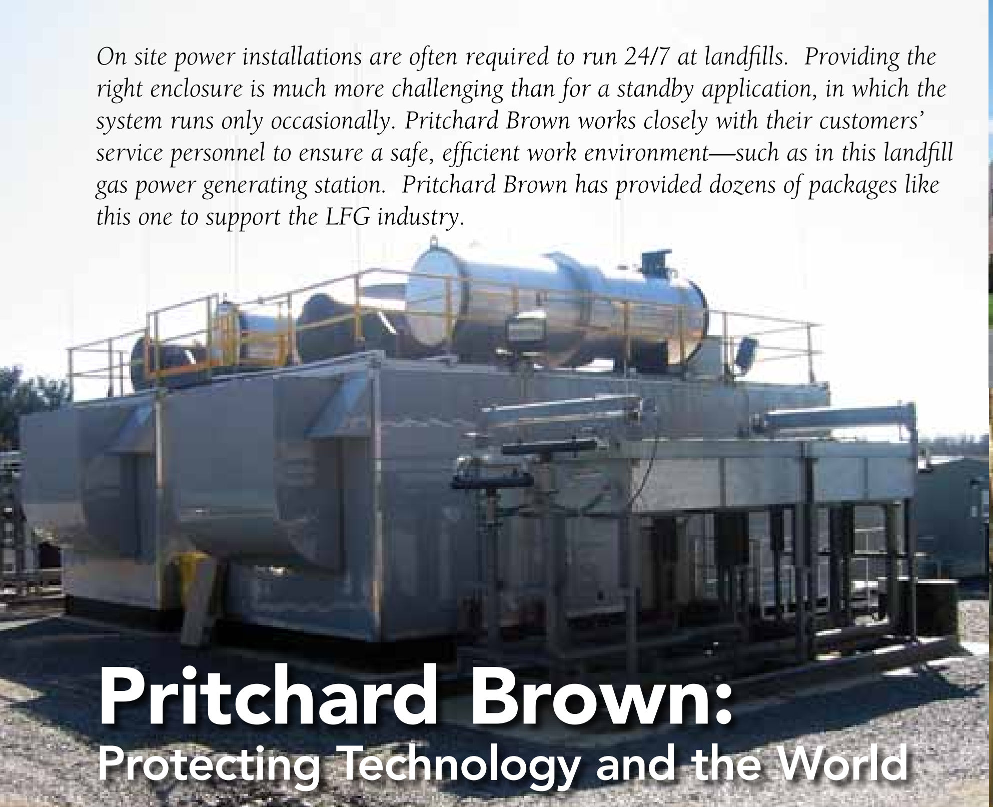
To view the pre-recorded webcast, visit: *http://egsa.org/MeetingsbrTradeShows/NFMTTradeShow.aspx* ■

Cam Marston - EGSA Fall Technical & Marketing Conference Keynote



Best-selling author Cam Marston will be the Keynote Speaker at EGSA's 2011 Fall Technical and Marketing Conference. "Using Technology to Bridge the Generation Gap" is this year's theme. Mr. Marston's keynote address will delineate the nuances of the four generations in today's workforce and their impact on commerce in the 21st century. His concepts are the result of more than a decade of extensive research inside businesses of all sizes and sectors. The results of this research have revealed significant correlations and generational differences that clients had not recognized. Mr. Marston will reveal the predictable attitudes of each of the generations and uncover how forward-thinking companies can adjust their current strategies to create future opportunities.

EGSA's 2011 Fall Technical and Marketing Conference will be held in Baltimore, MD from September 18 - 20, 2011. For more information, please visit, *www.egsa.org/fall.* ■



On site power installations are often required to run 24/7 at landfills. Providing the right enclosure is much more challenging than for a standby application, in which the system runs only occasionally. Pritchard Brown works closely with their customers' service personnel to ensure a safe, efficient work environment—such as in this landfill gas power generating station. Pritchard Brown has provided dozens of packages like this one to support the LFG industry.

Pritchard Brown:

Protecting Technology and the World

Another in Our Series of Profiles of EGSA Member Companies

Pritchard Brown LLC: A Diversified Customer Base Has Kept Our Business Strong for 64 Years.

At Pritchard Brown, the driving business philosophy behind 64 years of manufacturing expertise can be distilled into one simple, overarching philosophy: the Golden Rule…treating others the way we, ourselves, wish to be treated. "The market will always have room for a company that is willing to apply best business practices, and total process improvement to enhance products and exceed our customers' expectations," says Mike Witkowski, Vice President of Sales & Engineering for Pritchard Brown.

From manufacturing transportation-related equipment after World War II to current business related to "Smart Grid" technology or solar, wind power and fuel cell power equipment, Pritchard Brown has been building their brand with uncompromising integrity since 1947.

Founders Ken Pritchard and Charlie King came from the wartime aircraft and truck-body manufacturing sectors, respectively. Their joint effort and the blending of technologies within these two fields transformed the truck body industry in the United States before breaking into the on-site power packaging industry in the 1970's. Gradually, the company took on more and more challenging power projects, specializing in the emerging science of noise control. In 1986, Pritchard Brown, under new ownership, enhanced business capabilities to manufacture equipment for on-site power generation systems, switchgear and controls, electronics and telecommunications by hiring industry experts within the power industry, focusing on custom applications, and moving away from the truck-body market.

PRITCHARD BROWN IS…

…is a privately held company located in Baltimore, MD. Pritchard Brown, LLC manufactures custom, high-quality enclosures and fuel tank bases for generator sets though 3MW, and provides electro-mechanical system integration for genset Dealer-Distributors, switchgear manufacturers and engine Original Equipment Manufacturers.

For more information, visit *www.pritchardbrown.com.*

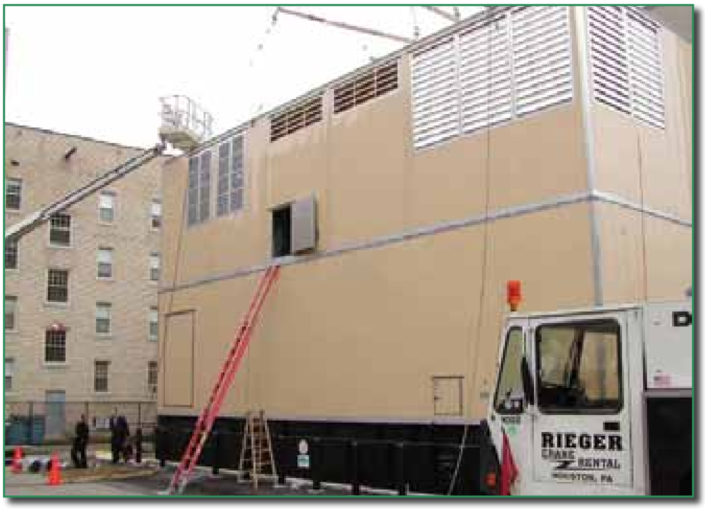
In 1994, Pritchard Brown moved to their current facility, boasting more than 70,000 sq. ft. of production space and advanced material handling manufacturing capabilities.

As a member of EGSA since 1977, Pritchard Brown has seen many changes in 34 years of manufacturing sound attenuating enclosures, fuel tank bases, switchgear enclosures, full electrical and mechanical packaging and testing. "While our customers are genset Dealer-Distributors, switchgear manufacturers and engine original equipment manufacturers, our clients have kept our business solid in economic uncertainty due to the diversified industries that we serve," Mike says. In the United States "The current customer base is focused competing for business in industries such as healthcare, pharma and higher education. Pritchard Brown products are installed throughout the world."

Because of the company's extensive technical expertise and breadth of experience, they are often asked to tackle projects that push the limits of transportable enclosure technology. Extreme sound attenuation, strict code compliance with high wind or high seismic forces, and even requirements such as electromagnetic shielding are all within Pritchard Brown's capabilities. This diversity has allowed them to serve markets from commercial standby power to highly sophisticated enclosures for surveillance equipment, mobile laboratories, and test equipment.

"Our sales and engineering team are the best in the business," says Witkowski, "and our customers know that they can count on us to provide the right design and quality workmanship, no matter how challenging the project. A packager is not just a manufacturer—we are like a general contractor, overseeing accessory purchases, electrical work, mechanical installation, and so on."

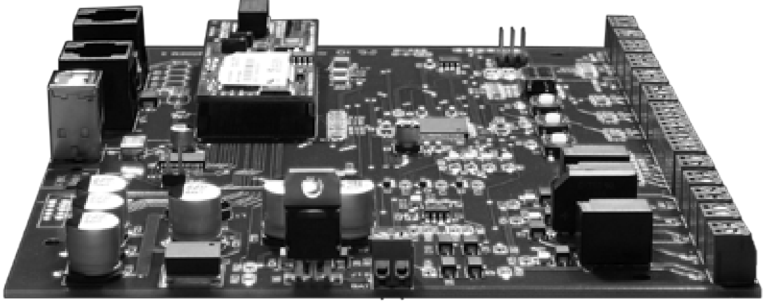
In 2003, Pritchard Brown became a part of Fennell Holdings, improving purchasing power and technical product support while maintaining their high quality standards, company identity and unique product lines. While it might be difficult to read the crystal ball and envision the next emerging technology, one thing is for certain, constant evolution and the dedication to best known practices will ensure that Pritchard Brown continues to lead the industry well into the 21st Century. ■



This 55 dB(A) reduction enclosure for a 1.8MW Diesel generator set is for a telecommunications facility. This is may be the quietest manufactured enclosure system for a 1.8MW diesel installation in the U.S.—achieving a third-party certified 45 dB(A) noise level at 50' in any direction. Pritchard Brown was the only packager contacted that was willing to tackle the project.

GENTRACKER
Generator Monitoring System

GENERATOR
MONITORING



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Towing the Line

Why Tech Certification Is Important to the Future of Onsite Power

While the majority of *Powerline* readers are aware that EGSA has a Certified Technician Program, it is also valuable to recognize what a positive impact the EGSA certification standard is making at a grassroots level as the program grows each year. There are far-reaching positive impacts, not just for the On-Site Power Generation industry, but for the certified technicians, the people who employ them, and the clients who use them.

How does a generator service technician set himself apart from other qualified technicians? One of the most telling ways is to pass the EGSA Certification exam. Both EGSA Distributor/Dealers and Manufacturers promote the program by encouraging service technicians to take the exam. At press time for this issue, EGSA Director of Education, Mr. George Rowley, reported that there are currently 427 EGSA certified technicians nationwide as of May 31, 2011. While that number continues to climb, *Powerline* decided to present to our readers a case study that examines one employer and one employee who have taken this journey together for more than five years. Did certification provide impactful changes for them? Let's take a look!

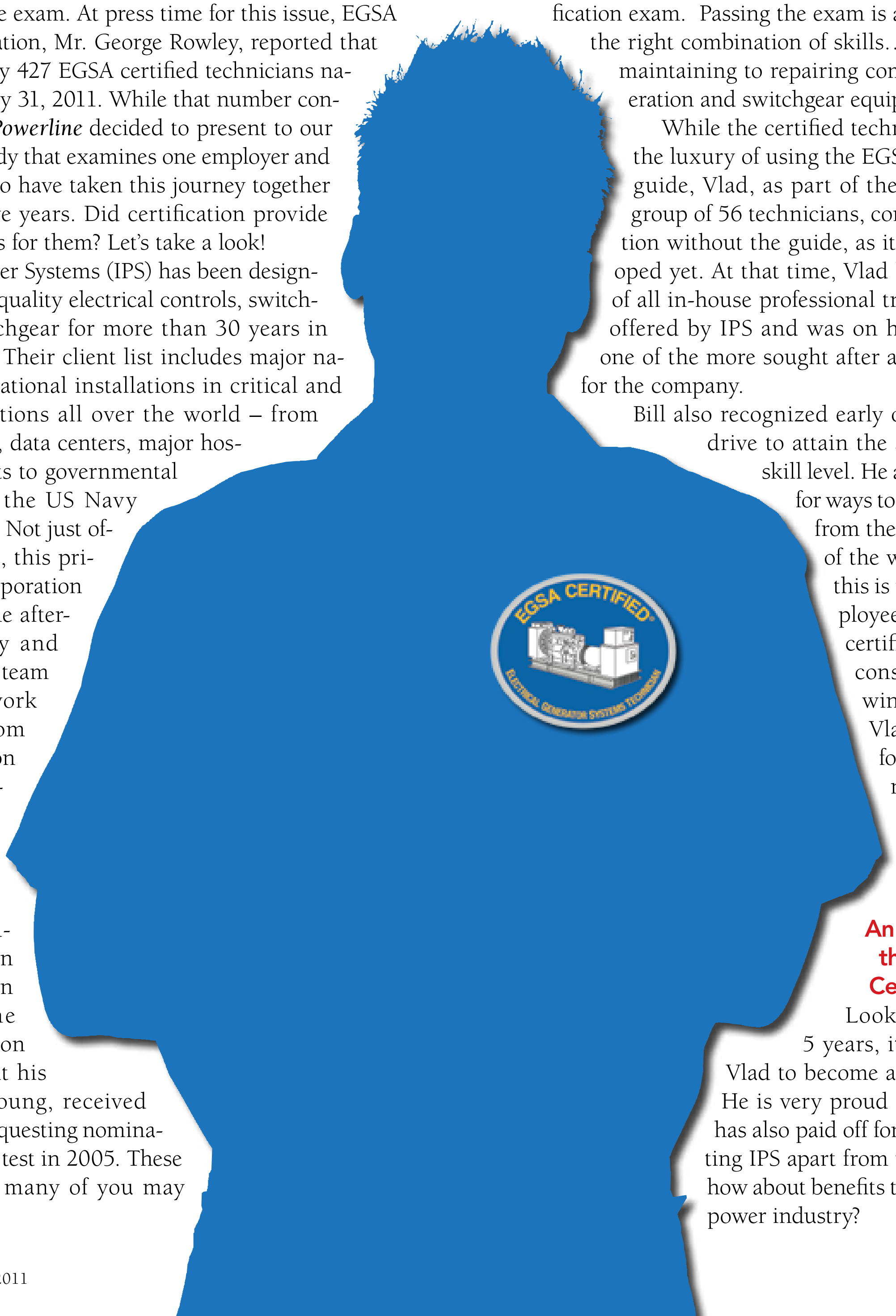
Industrial Power Systems (IPS) has been designing and building quality electrical controls, switchboards and switchgear for more than 30 years in Jacksonville, FL. Their client list includes major national and international installations in critical and sensitive applications all over the world – from electrical utilities, data centers, major hospitals and airports to governmental applications for the US Navy and Coast Guard. Not just offering equipment, this privately-owned corporation has an impeccable after-sales philosophy and dedicates project team members that work with a client from project conception until the installation and start-up operations are complete.

Vladislav Bagaturov, an advanced technician with IPS, began considering the EGSA Certification from the moment his employer, Bill Young, received the fax from us requesting nominations for the pilot test in 2005. These nominations, as many of you may recall, were divided into three classification levels of experience, ranging from 0-1 years of experience, 1 to 5 years, with the most advanced level spanning more than 5 years. Vlad participated in the 1 to 5 year level at that time and was the only IPS employee that made the cut for the pilot test.

The certification exam was developed and validated by Ferris State University faculty in collaboration with EGSA expert technicians and it established the standards of performance and knowledge for generator and switchgear service technicians. Bill Young and IPS's history with the certification program also includes an employee that assisted with the development of the initial certification exam. Passing the exam is a testament to having the right combination of skills….from installing and maintaining to repairing complicated power generation and switchgear equipment.

While the certified technicians of 2011 enjoy the luxury of using the EGSA certification study guide, Vlad, as part of the inaugural pilot test group of 56 technicians, completed the certification without the guide, as it had not been developed yet. At that time, Vlad had taken advantage of all in-house professional training opportunities offered by IPS and was on his way to becoming one of the more sought after advanced technicians for the company.

Bill also recognized early on that Vlad had the drive to attain the advanced technician skill level. He also continually looks for ways to set his business apart from the competition and one of the ways he demonstrates this is to incentivize his employees to take part in the certification program. Bill considers the program a win-win for himself and Vlad because it is good for morale and for business and as an active member of EGSA; he also knows it is good for the industry.



An Industry Standard– the EGSA Technician Certification Program

Looking back at the last 5 years, it was good move for Vlad to become a certified technician. He is very proud to wear the patch. It has also paid off for his employer, by setting IPS apart from its competition…but, how about benefits to the onsite generator power industry?

"While certification is not an industry requirement, applying for and passing this exam is showing IPS clients that our technician is proficient at start-up and commissioning, service calls and maintaining switchgear equipment. It is an advantage to employ someone with this certification; it is also a great marketing opportunity when I am competing for a bid," Young stated.

On a side note, Vlad is also one of a handful of people already eligible for recertification. He passed the certification exam for a second time in December, 2010 and confided that he used the study guide the second time around.

The benefits of this program are numerous for the industry as a whole such as:

- The program's ability to create industry-wide standards, so that owners of generator systems have an objective way to gauge whether a company bidding on their work is qualified because they employ EGSA certified technicians;
- To be used as an effective measurement and/or interview tool with technical staff;
- To add objectivity to a subjective process of an employee evaluation;
- To provide a basis for a cost-effective in-house training/testing program;
- To give manufacturing companies a way to measure their Dealer and Distributor network;
- To be an effective tool in the marketplace;
- To be an incentive program for technical staff;
- To be an answer to the need for more technicians and more industry recognition.

What about the future of the certification program? Most industry experts agree that when working with an on-site power system, those clients with critical emergency equipment need to be able to have a high level of comfort that the systems are going to work when called upon. The EGSA certification program is a method of standardized testing to ensure that a technician has the knowledge to understand how these complicated systems work and operate. ■

Have a story that you'd like to share on the EGSA certification program? We'd love to hear from you! Please contact *k.giles@egsa.org*.

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    - On-Site Power Schools
    - EGSA Conferences and Conventions
    - The EGSA On-Site Power Reference Book
2. Free job postings in our Job Bank
3. Access to informative presentations from past EGSA conferences
4. Use of the EGSA logo on your company advertisements, website, stationery, etc.
5. Priority booking of your booth in the EGSA Pavilion at POWER-GEN International
6. Access to EGSA's quarterly generator shipment survey
7. Listing in EGSA's Annual Buying Guide (distributed to over 30,000 industry leaders)
8. Your company information will appear on EGSA's website
9. Networking opportunities at EGSA events, including conferences, conventions, trade shows and receptions
10. Participate on committees that influence the course of the association and the entire industry

EGSA Electrical Generating Systems Association

Electrical Generating Systems Association

EGSA JOB BANK

Generator Field Service Technician

Pacific Power Products, the Kohler Power Systems Dealership for the Hawaiian Islands, is in need of experienced generator field service technicians. Candidate must be motivated, self sufficient, and computer literate. Strong customer communication and diagnostic skills are a must. Must have a High School Diploma and a minimum of 5-years experience servicing industrial, marine, and residential, gaseous and diesel fueled generator sets and ancillary equipment. Military experience a plus. Job requires extensive travel and includes performing preventative maintenance, repairs, and start-ups of generator sets throughout the Hawaiian Islands. Clean driving record a must and applicant must pass a pre-employment medical examination and drug screening. We offer a full benefits package, i.e. Medical, Dental, Vision, 401(k), long and short term disability, paid holidays, paid vacation, overtime, and could offer paid relocation to the right candidate. E-mail your resume, work experience, and salary requirements to *tvermette@pac-power.com*. Pacific Power Products is an equal opportunity employer and a drug free workplace. **EGSA Certified Technicians Preferred.**

Generator Field Service Tech

Kentech Power has immediate openings for a Generator Field Service Tech located and operated in Houston and San Antonio, Texas. Kentech is seeking an experienced generator technician who is capable of troubleshooting, repair and maintenance of diesel and gaseous generator sets and associated switch gear. Candidate must have 3 to 5 years experience, be a team player, clean license and background. Benefits: health, dental, paid vacation/holidays. Submit resume: *jobs@kentechpower.com*
EGSA Certified Technicians Preferred.

Commercial Generator Technician

Atech Energy of Atlantic Tractor is seeking a Service Technician experienced in commercial generators. Minimum of 3 years experience consisting of installation, total repairs and replacements. This position will require having the flexibility of 24/7 on-call emergency service. This person must also have great customer service skills, including the ability to be a sales rep for the equipment he is servicing. We offer a very competitive salary & excellent benefit package. Please apply at *www.atjd.net* and click on Job Opportunities.

Penn Power Systems

Penn Power Systems, an industry leader with power systems sales of MTU Onsite Energy products is seeking qualified sales people for central and eastern PA. Individuals need to possess a high drive to succeed and be comfortable discussing projects with engineers, contractors and end users. Penn offers a very aggressive salary and compensation package along with benefits and the necessary sales tools to succeed. Please send resumes to *jtiffan@pennpowersystems.com*

Generator Sales

Central Power Systems & Services, Inc. has immediate opening for Generator Rental Manager based out of Kansas City, plus Generator Sales positions in Wichita, KS and Springfield, MO. We offer a strong base wage, incentive program and a full benefit package (including company car, gas allowance, expense card, FREE MEDICAL insurance, FREE LIFE insurance, paid vacation, profit sharing and 401(k), etc.). Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to *jobs@cpower.com* EOE

EGSA Job Bank Guidelines

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank. Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a $300 fee. Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. Please send your classified ad (limited to about 50 words) to: EGSA Job Bank, 1650 S. Dixie Hwy, Suite 400, Boca Raton, FL 33432. Or, send it via e-mail it to: *J.Kellough@EGSA.org*

Generator Technician

KELLY GENERATOR & EQUIPMENT, INC., the mid-Atlantic leader in standby electrical generators is seeking experienced Generator Technicians. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region that covers Delaware, Maryland, Northern Virginia, West Virginia and Washington, DC.

SALES, SERVICE, PARTS, RENTALS & TRAINING

- We offer factory training on the lines we represent as well as "in house" training
- Medical, dental, vision, 401(k), profit sharing, short and long term disability, paid holidays, annual leave, overtime and paid "On Call"

Must have a High School Diploma (Vo-tech or GED), 3 – 5 years experience servicing industrial generator sets and associated equipment. Must be able to service, repair and troubleshoot the engine, as well as the alternator end and controls of the equipment. E-mail resumes to *dkelly@kge.com*
EGSA Certified Technicians Preferred.

Emergency Generator Sales

We are growing! Genset Services, Inc. the top tier industrial distributor for Generac generators in South Florida has an opening for an outside salesperson. Candidates should have a minimum of 6yrs sales experience in emergency power equipment or in a similar or related field. We offer a competitive compensation package that includes a base salary plus commissions, car allowance, health insurance, vacation and investment plan. Please forward your resume with cover letter and salary requirements to *matt@gensetservices.com*

Rental Sales
Kelly Generator & Equipment, Inc

We are seeking an experienced RENTAL SALES person to join our team. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region: Delaware, Maryland, Washington DC, Northern Virginia and West Virginia.

- Develop strong relationships with electrical and general contractors, home builders, event companies, industrial and commercial end users and rental houses.
- Focus will be on the rental (and sales) of mobile generator sets as well as renting load banks.
- Sell service contracts

We offer a solid base with commission, medical, dental, vision, 401(k), profit sharing and more. Fax resumes to 410-257-5227 or e-mail *dkelly@kge.com*

Generator Field Technicians

TAW® is searching for experienced Generator Field Technicians in Orlando & Tampa, FL. Duties include: inspections, repairs, services and start-up of generators & ATS. Troubleshoot generators & automatic transfer switches. Diesel engine experience desired. E-mail resume to *ellen.donegan@tawinc.com*. Fax (813) 217-8076.AA/EOE. DFWP. *www.tawinc.com* **EGSA Certified Technicians Preferred.**

Industrial Switchgear Product Specialists

TAW® is looking for Ind. Switchgear Product Specialists for our Power & Distribution & Switchgear Div at our custom equipment facility in Riverview, FL. Will increase sales of switchgear & power equipment centers for low & medium voltage product lines with new & existing accounts. Will target customers for utilities; OEM's & municipalities to drive volume. Prior experience either selling, or application engineering of, industrial switchgear systems. Prior experience working for a manufacturer, or re-seller of industrial switchgear – medium or low voltage in either an engineering; applications; or sales role. TAW® offers a competitive salary and commission as well as benefits. Candidates can be based, & will cover the following markets: Houston, Atlanta, Charlotte & Birmingham. Candidates can e-mail resumes to *ellen.donegan@tawinc.com*. or fax resumes to (813) 217-8076;. AA/EOE. DFWP. *www.tawinc.com*

Generator Field Technician

PM Technologies, LLC has several immediate openings for Generator Technicians. We are located and operate in Michigan, Ohio and Northern Indiana. High School diploma or equivalent a must. Military experience a plus. Must be able to troubleshoot and repair the engine (diesel and gaseous) as well as the generator end. Customer interaction will be required on a daily basis. We need highly motivated, self sufficient people to assist in growing our expansion efforts at new branch locations. Benefits include company vehicle, 401k, health, dental and vision coverage's as well as paid bonuses for new account procurement. Fax resumes to 248.374.6408 or e-mail to *dpopp@pmtech.org* **EGSA Certified Technicians Preferred.**

TEAM Focused Technicians ONLY

Would you enjoy joining an exciting team of professional technicians? This may be the opportunity you have been looking for!
DynaTech Power is a service focused generator company with a strong team culture committed to delivering World-Class service to the customers we serve in PA, NJ, MD, and DE. E-mail Jim Goshert at *jim.goshert@dynagen.com* to request a hiring kit. EGSA graduates and interns welcome! 800.779.8809 x213. Learn more at *www.dynagen.com*
EGSA Certified Technicians Preferred.

Generator Service Technicians
Prime Power Services, Inc.

Growing company is seeking qualified candidates - with 3-5 years of experience in the power generation field, skilled in both mechanical and electrical applications having knowledge in troubleshooting, maintenance/repair for gensets ranging from 5-2000 KW w/associated fuel systems, switchgear, transfers and controls. Must pass a criminal background/drug screen, experience w/UPS systems, and other EPSS systems.
Please forward your resume with cover letter and salary requirements to *ccernut@primepower.com*
EGSA Certified Technicians Preferred.

EGSA JOB BANK

Technical Support Engineer

Located in Fort Collins, CO on the front range of the Rocky Mountains, DEIF continues to grow and expand. Currently we are looking for a new team member that will help customers with start-up/commissioning activities, provide technical training, and answer technical inquiries. This is a hands-on entry level position for Electrical or Mechanical Engineering graduates with some experience or training in distributed power generation. Travel required, including international. See the complete job description at *www.deif.com* or e-mail your resume to *us@deif.com*.

Power Generation Equipment Sales Person

Kentech Power is looking for a full-time Power Generation Equipment Sales Person. Potential candidates should possess previous sales experience, preferably in the Power Generation Equipment Field. They must be highly motivated and customer focused. They must be willing to work in the San Antonio / Austin area. Interested candidates should send their resume through our website at *www.kenterchpower.com* or by fax to 210-946-2473.

Western Branch Diesel, Inc.

This position is for Territory Manager in Northern Va. area. Experienced candidate in the Power Generation Industry with sales or sales engineering background to sell and manage large accounts. Call for additional information. Please send resume to *salesposition@wbdiesel.com* or 12011 Balls Ford Road Manassas, VA 20109.

Electro-Mechanical Technicians

The Fleet Management Department of Pinellas County Government has two openings for Electro-Mechanical Technicians in the Tampa Bay Area. Salary Range: $36,046-$56,056. We offer excellent benefit and compensation packages. For more information about the positions, the requirements of the positions, and to apply, please visit our website at *https://employment.pinellascounty.org*. EOE/AA/ADA/DFW/VP

Generator Service Technicians

CJ's Power Systems in Florida, a distributor for MTU Onsite Energy is currently seeking qualified technicians throughout the state. Job includes: performing planned maintenance, diagnostics, repairs, and startups of generators. Knowledgeable, computer skills, clean driving record a must. Excellent pay, medical, and other benefits. E-mail resumes: *jobs@cjspower.com*; fax to 352-732-0606 **EGSA Certified Technicians Preferred.**

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Experienced Power Generation Technicians Wanted!

Penn Power Systems, leaders in the power generation business, is actively seeking experienced field service technicians for open positions in our upstate New York and Pennsylvania locations. Candidates should be familiar with natural gas and diesel prime movers with industry experience and knowledge of systems and controls. Penn Power Systems and its divisions offer industry competitive salaries, medical, 401(k), and vacation benefits. All interested parties should send resumes and work related history to *jobs@pennpowersystems.com* or call 1-877-736-4473. **We Proudly Employ EGSA Certified Generator Technicians.** EOE M/F/D/V

Generator Field Technician-Experienced

ACF Standby Systems seeks full-time experienced generator field technicians for openings in the Orlando/Miami, FL areas. Requires advanced knowledge of standby generator systems. Minimum 5 years experience. Working knowledge of 12 & 24 VDC controls. Company offers a full comprehensive benefits package. Competitive wage, company vehicle, laptop and cell phone for qualified candidates. Send resumes to careers@acfpower.com or fax to HR at 813-621-6980. **EGSA Certified Technicians Preferred.**

Generator Service Technician

Antilles Power is seeking a highly motivated, self sufficient candidate for our Caribbean, Virgin Islands locations. Duties include: Preventative Maintenance, Troubleshooting, Commissioning, Diagnostics, Repairs of Generators and Automatic Transfer Switches. Diesel Engine and Marine experience required. Drug screening and clean driving records are prerequisites. Computer knowledge and **EGSA Certified Technician Preferred**. E-mail resume with references and salary requirements to *m.torres@antillespower.com*

Power Solutions Manager
Generac Power Systems- North America

Provide technical sales support of Generac Industrial products with a focus on Modular Power System (MPS) solutions; assist the Sales Team and Dealers to specify and source Generac products. Additional responsibilities will include conducting training seminars for the electrical engineering community. For more information, visit *www.generac.com/About/Careers/*

Pump Product Manager

Join the industry's fastest growing Light Tower, Generator, Water Trailer and Diesel-powered Pump Company. Our team is dedicated to providing the best solutions, customer service and technical support in the industry.

This position is responsible for the development, planning and marketing of new product and product enhancements for Magnum's Pump line. This will involve managing all aspects of the product lifecycle, defining product vision, gathering and prioritizing product and customer requirements. This position will ensure pump performance is in-line with customer expectations, revenue goals and overall company strategy and objectives. Complete benefit package offered.

Please send resume to *jdavids@m-p-llc.com* or
Attn: Julie Davids 215 Power Dr. Berlin, WI 54923
www.m-p-llc.com

Generator Set Sales/Service

Experienced sales/service engineer needed by southern California company to sell engine generator sets. Please respond to *J.Kellough@EGSA.org* (Reference PLND06JB-1).

Generator Service Technicians

We are growing! Genset Services, Inc. is seeking qualified generator technicians for our Central and South Florida branches. Working knowledge of Diesel and Gaseous engine driven generator sets is required including service/maintenance, troubleshooting/repair of AC and DC electrical and control systems as well as strong computer skills. Ideal candidate will have neat appearance and clean driving record. We offer a competitive compensation package including company vehicle, health insurance, vacation and an investment plan. Please forward your resume with cover letter and salary requirements to *keith@gensetservices.com* **EGSA Certified Technicians Preferred.**

Generator Technician

Full time experiences generator field technician needed for Central Florida/Lakeland area. Applicant must have diesel engine experience and transer switch knowledge, preferably EGSA certified. Job includes performing preventive maintenance, repairs, and startups of generators. Clean driving record a must and applicant must pass drug screening. Competitive wages and benefits. E-mail resumes to *skapparos@suregen.com* **EGSA Certified Technicians Preferred.**

Generator Technicians

Due to our continued growth, Central Power Systems & Services, Inc. has immediate openings for Generator Technicians at several of our Missouri, Kansas and Oklahoma facilities. We offer a strong base wage and a full benefit package (including FREE MEDICAL & LIFE insurance) and PAID RELOCATION depending on skill set. Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to *jobs@cpower.com* EOE **EGSA Certified Technicians Preferred.**

Generator Service Technician

Buckeye Power Sales, the oldest signed Kohler Distributor, seeks service technicians to perform PM's, start-up, & warranty work on power generators in Ohio and Indiana. Must have knowledge of gas & diesel engines, A/C D/C circuits, 1+ years experience with generator equipment, able to troubleshoot from wiring schematics, knowledge of NFPA 70E; knowledge of Kohler a plus. Must have clean driving record, drug screen, and background. Travel to customer sites; able to drive manual transmission a plus. Company vehicle provided. Competitive pay & full benefits package. Apply: *resumes@buckeyepowersales.com*. No phone calls or agencies please. E/O/E Drug-Free Workplace **EGSA Certified Technicians Preferred.**

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Join the industry's fastest growing Light Tower, Generator, Water Trailer and Diesel-powered Pump Company. Our team is dedicated to providing the best solutions, customer service, and technical support in the industry.

A working knowledge of mechanical design and electronics required; strong communication and trouble shooting skills preferred. Compensation and benefit package include: base salary + commission, medical, dental, vision, 401K and vehicle. Extensive travel is required.

Western Region – WA, OR, CA, NV, AZ, CO, UT
Gulf States Region – OK, AR, LA, TX, NM
Please send resume to *jdavids@m-p-llc.com* or
Attn: Julie Davids 215 Power Dr. Berlin, WI 54923
www.m-p-llc.com

Hawthorne Power Systems Receives Gold Level Dealership Award

Hawthorne Power Systems has been chosen as one of Caterpillar's top three North American dealers based on exceptional customer service.

The Power Excellence Program recognizes outstanding power systems performance in adhering to the goal of driving positive dealer development and improvement. The metrics focus on efficiency, customer service and financial stability.

"We are all extremely proud of our entire Power Systems team, not only here in San Diego, but in Hawaii, American Samoa, Guam and Saipan. The hard work shown by all on a daily basis truly demonstrates our customer-focused Hawthorne P.R.I.D.E – Passion, Respect, Integrity, Dedication and Excellence," stated Dave Ness, Division Manager for Hawthorne Power Systems.

Hawthorne Power Systems, an authorized Caterpillar dealer, provides sales, rentals and services the power generation, marine, trucking and other engine-related markets. Located in San Diego (Kearny Mesa), California, this division also has branches in Hawaii and Guam. For more on Hawthorne visit *www.hawthornecat.com.* ■

Central Power Systems & Services Signs on as New Dealer of Doosan Portable Power Equipment

Doosan Portable Power has appointed Central Power Systems & Services of Liberty, MO, as an authorized dealer of its line of mobile generators, portable air compressors and light towers for western Missouri and the state of Kansas.

Central Power Systems & Services began in 1954, with a focus on servicing and supporting the oil and gas industry in the state of Kansas. This family-owned business has since grown to encompass nine branch locations throughout its service area, incorporating new products and services to meet off-highway and on-highway customer needs.

"We're still in growth mode," says Bryan Redburn, Executive Vice President of Central Power Systems & Services and third-generation co-owner of the business. "Now that we've added Doosan Portable Power products to our lineup, we look forward to having complementary and synergistic product offerings for our existing construction customer base. And we've effectively improved our place in the rental market by replacing a majority of our rental generator sets with Doosan Portable Power products."

"Central Power Systems & Services is dedicated to their customers, which aligns well with the goals of Doosan Portable Power," says Rita Moore, Director of Sales, North America, for Doosan Portable Power. "Central Power Systems has been a longstanding leader in the oil and gas industry, but is new to the air compressor market. We look forward to helping them grow this area of their business."

For more information, please visit *doosanportablepower.com* and *cpower.com.* ■

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HOTSTART Appoints New CEO, Sales Director

Terry Judge has been named Chief Executive Officer of HOTSTART, Inc. *(www.hotstart.com)* effective March 18, 2011. Judge previously served as Director of Sales and Marketing and joined the company in 2001. He succeeds Rick Robinson, who retired in March after 23 years as company CEO.

The company selected Trond Liaboe to replace Judge as Director of Sales and Marketing. Liaboe previously served as International Market Manager and has been with the company since 2002.

For 69 years, HOTSTART has been family owned, maintaining its manufacturing headquarters in Spokane, Washington. The company employs 150 full-time employees. ■

United Alloy, Inc. Boasts Two New Certifications.

The Women's Business Enterprise National Council (WBENC) recently certified United Alloy, Inc.(UAI) as a woman-owned, operated and controlled business. UAI successfully met WBENC's standards and can now open additional markets in 2011. (WBENC #2005118172)

UAI also became Transport Canada UN31A Certified. This international certification allows UAI's UN31A Sub Base Tanks to be sold in Canada. UAI has been producing UL142 Diesel Tanks in Janesville for over 10 yrs. This certification is the first of several certifications in the pipeline for UAI in the Canadian market.

UAI is a custom metal fabrication & powder coating company and is an ISO 9001:2008 facility. Located in Janesville, WI, UAI produces diesel fuel tanks, generator frames, heavy metal fabrications and weldments. For more information, visit *www.UnitedAlloy.com*. ■

CPM and Pellet Technology Form Strategic Alliance to Provide Solutions for Energy Industry

CPM, a supplier of process equipment and technology for the animal feed, oilseed, biofuels and human food-processing industries, and Pellet Technology LLC, announce the formation of a strategic alliance that will help bring sustainable, renewable energy to electric utilities and biofuels producers.

Pellet Technology has developed a complete supply chain solution for biomass users that includes feedstock supply contracting, harvest management and patent-pending, production technology to turn corn stover into PowerPellets™ on an economic and environmentally-sound basis. Under the agreement, the two companies will work together to market Pellet Technology's biomass engineering processes along with CPM's hammermills and pellet mills. Together, they'll implement a "field-to-fuel" program that provides electric utilities and biofuels producers with an affordable and reliable source of renewable energy.

"We're pleased to form this alliance with a company that's working to make the biomass supply chain more cost-efficient and accessible," said Jim Hughes, CPM General Manager. "Pellet Technology is on the cutting edge of developing processes for renewable energy."

"CPM produces the highest-quality pellet mills in the world, with the best production levels and excellent pellet quality," said Russ Zeeck, Chief Operating Officer for Pellet Technology. "Working with CPM, we give our customers access to equipment and service they can depend on."

Pellet Technology is an integrated, field-to-fuel biomass technology provider primarily focused on corn stover, the most abundant source of renewable biomass in America.

CPM has more than 900 employees with production facilities in the Americas, Europe and Asia. For more information, visit *www.cpm.net* or *www.pellettechnologyusa.com*. ■

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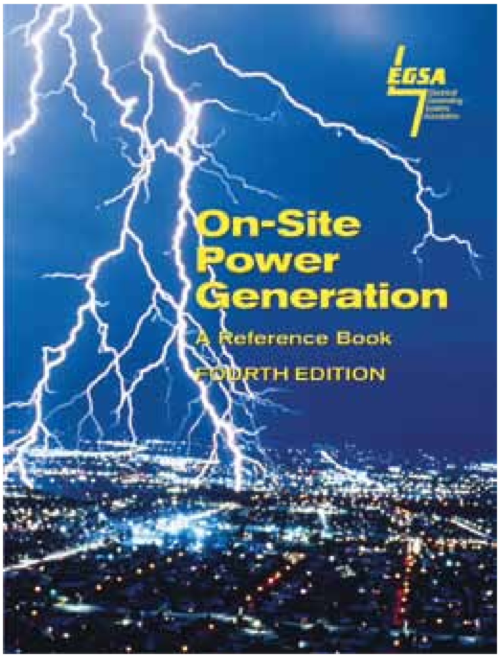

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In fact, EGSA's *Reference Book* is so highly regarded and widely recognized that five of the seven technical schools that offer On-Site Power Generation Technician training programs have adopted the *Reference Book* as their text.

If the educators who helped train your Generator Technicians keep EGSA's *Reference Book* on hand, shouldn't you?

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